

WHAT IS CLAIMED IS:

1. An automatic gain control system comprising:
means for tabulating statistical information about periodicity and duration of RF
interference; and

means operable, at least in part, to certain tabulated statistics for directing the gain of
5 said gain control circuit.

2. The automatic gain control system of claim 1 wherein said means for
tabulating also tabulates statistical information about the strength of said RF interference.

3. The automatic gain control system of claim 1 wherein said means for
tabulating comprises means for detecting said interference.

4. The automatic gain control system of claim 3 wherein said means for detecting
comprises an antenna.

5. The automatic gain control system of claim 3 wherein said means for detecting
comprises means for monitoring an RF data stream for said interference.

6. The automatic gain control system of claim 1 wherein said means for directing includes means for selecting at least one action from of a group of actions to reduce effects of said interference, said group of actions consisting of:

maintaining gain levels, ignoring said interference;
adjusting gain levels in response to gain of said signals;
raising gain level prior to onset of said interference;
lowering gain level prior to onset of said interference;
raising gain levels at cessation of said interference; and
lowering gain levels at cessation of said interference.

7. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for scheduling transmissions to avoid said interference .

8. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for changing an RF frequency of transmissions.

9. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for changing antenna polarity of RF transmissions.

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10. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for performing waveform subtraction of said interference.

11. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for equalizing multipath events of an RF transmission.

12. The automatic gain control system of claim 6 further comprising means operable, at least in part, to certain tabulated statistics for increasing forward error correction of a transmission.

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13. A method for operating a gain control circuit, said method comprising the steps of:

gathering statistical information about periodicity and duration of RF interference;

and

5 directing the gain of said gain control circuit under at least partial control of said gathered statistical information to mitigate effects of said interference.

14. The method of claim 13 wherein said gathering includes gathering statistical information about the strength of said RF interference.

15. The method of claim 13 wherein said gathering step includes the step of detecting said interference.

16. The method of claim 15 wherein said detecting step includes receiving said interference on an antenna.

17. The method of claim 15 wherein said detecting step includes monitoring an RF data stream for said interference.

18. The method of claim 13 wherein said directing step further includes at least one step from a group of steps consisting of:

directing said gain to hold gain levels, ignoring said interference;
directing said gain to adjust gain levels in response to gain of said signals;
5 directing said gain to raise gain level prior to onset of said interference;
directing said gain to lower gain level prior to onset of said interference;
directing said gain to raise gain levels at cessation of said interference; and
directing said gain to lower gain levels at cessation of said interference.

19. The method of claim 13 wherein said directing step further includes at least one step from a group of steps consisting of:

directing said gain to hold gain levels, ignoring said interference;
directing said gain to adjust gain levels in response to gain of said signals;
5 directing said gain to raise gain level prior to onset of said interference;
directing said gain to lower gain level prior to onset of said interference;
directing said gain to raise gain levels at cessation of said interference;
directing said gain to lower gain levels at cessation of said interference;
scheduling RF transmissions to avoid said interference;
10 changing an RF frequency of transmissions;
changing antenna polarity of RF transmissions;
performing waveform subtraction of said interference;
equalizing multipath events of an RF transmission; and
increasing forward error correction of a transmission.

20. A circuit for an RF data transmission system, said circuit comprising:
a digital delay stage delaying incoming RF data signals and outputting delayed IF
signals;
a variable gain stage receiving said delayed IF signals and outputting gain adjusted IF
5 signals to a demodulator for said system;
means for monitoring RF interference;
means for gathering statistical information about periodicity and duration of said RF
interference; and
means for controlling said variable gain stage in response to said gathered statistical
10 information to adjust gain of said delayed IF signals mitigating effects of said RF interference
on said signals.

21. The circuit of claim 20 wherein said means for gathering also gathers
statistical information about the strength of said RF interference.

22. The circuit of claim 20 wherein said means for monitoring comprises an
antenna.

23. The circuit of claim 22 wherein said means for monitoring comprises means
for analyzing said RF data signals for said interference.

24. The circuit of claim 21 wherein said means for controlling selects at least one action for said variable gain control stage in response to said statistical information from of a group of actions to reduce interference, said group of actions consisting of:

directing said gain stage to hold gain levels, ignoring said interference;

directing said gain stage to adjust gain levels in response to gain of said

signals;

directing said gain stage to raise gain level prior to onset of said interference;

directing said gain stage to lower gain level prior to onset of said interference;

directing said gain stage to raise gain levels at cessation of said interference;

and

directing said gain stage to lower gain levels at cessation of said interference.

25. The circuit of claim 20 further comprising means for responding to said gathered statistical information by directing said system to select from a group of actions to mitigate effects of said interference, said group of actions consisting of:

scheduling transmissions to avoid said interference;

changing an RF frequency of transmissions;

changing antenna polarity of RF transmissions;

performing waveform subtraction of said interference;

equalizing multipath events of an RF transmission; and

increasing forward error correction of a transmission.

26. A circuit for an RF data transmission system, said circuit comprising:
a digital delay stage delaying incoming RF data signals and outputting delayed IF
signals;
a variable gain stage receiving said delayed IF signals and outputting gain adjusted IF
5 signals to a demodulator for said system;
a statistics gathering engine collecting periodicity, duration and strength information
about RF interference; and
a response stage adjusting said variable gain stage in response to said periodicity and
duration information to mitigate effects of said RF interference on said signals.

27. The circuit of claim 26 wherein said statistics gathering engine analyzes said
incoming RF data signals for said interference.

28. The circuit of claim 26 further comprising an antenna in electrical
communication with said statistics gathering engine, said antenna monitoring said RF
interference.

29. The circuit of claim 26 wherein said response stage selects at least one action for said variable gain control stage in response to said periodicity and duration information from of a group of actions to mitigate interference, said group of actions consisting of:

directing said gain stage to hold gain levels, ignoring said interference;

5 directing said gain stage to adjust gain levels in response to gain of said signals;

directing said gain stage to raise gain level prior to onset of said interference;

directing said gain stage to lower gain level prior to onset of said interference;

directing said gain stage to raise gain levels at cessation of said interference;

10 and

directing said gain stage to lower gain levels at cessation of said interference.

30. The circuit of claim 29 further comprising a control stage directing, in response to said periodicity and duration information, said system to select from a group of actions to mitigate effects of said RF interference on said signals, said group of actions consisting of:

5 scheduling transmissions to avoid said interference;

changing an RF frequency of transmissions;

changing antenna polarity of RF transmissions;

performing waveform subtraction of said interference;

equalizing multipath events of an RF transmission; and

10 increasing forward error correction of a transmission.